

APHIS/CFIA site visit – FMD outbreak in Northern Ireland  
August 13-14, 2001

Team members:

Lisa Ferguson, APHIS, VS  
Anne Goodman, APHIS, VS  
Juan Lubroth, APHIS, VS  
Barbara Corso, APHIS, VS  
Debbie Barr, CFIA/Ottawa  
Steve Knight, FAS/London

The team visited Northern Ireland August 13-14, 2001. Initial discussions were held at the headquarters of the Department of Agriculture and Rural Development (DARDNI) in Belfast. Visits were also made to the maritime port facility at Larne and to the Local Disease Control Center at Newry. Primary contacts for the visit arrangements were Dr. Robert Huey, Divisional Veterinary Officer, and Dr. Robert Houston, Deputy Chief Veterinary Officer.

A total of 4 confirmed outbreaks of FMD occurred in Northern Ireland. The first outbreak was identified on February 27, 2001, and the last case was on April 22. Control measures as outlined in Community legislation were taken in each instance. An additional serological survey in the sheep population was done to determine whether any further spread of FMD had occurred. Restrictions imposed in Community legislation were lifted on June 7, in Commission Decision 2001/430/EC.

The Veterinary Services in Northern Ireland integrates animal health and public health functions. They answer to the Department of Agriculture and Rural Development on animal health issues and to the UK Food Standards Agency on public health issues. Approximately 700 people are employed by the Veterinary Services, including Veterinary Officers, Animal Health and Welfare Inspectors, Meat Inspectors and administrative staff.

Northern Ireland shares a land border with the Republic of Ireland. There are 2 primary seaports at Belfast and Larne, with ferry traffic primarily from Great Britain and other commercial maritime activities. There are 2 airports located in Belfast and Derry. Northern Ireland has a cattle population of 1.7 million, a sheep population of 2.9 million, and a pig population of 490,000. There are a total of 10 cattle (6 sheep), 4 pig and 12 poultry slaughter premises.

Animal identification:

Cattle identification is required and all identification and movements are recorded in the Animal and Public Health Information System (APHIS). This is a computer database with the following functional areas: identification and registration, disease control,

movement records, residues, import/export certification, animal health and welfare, and meat inspection. A unique tag number issued by DARDNI from the computer system identifies every animal. Information on herd of origin, movements, program disease test history, and slaughter information (including ante and post mortem inspection information) is maintained in the APHIS database.

The APHIS database does not include sheep or swine. Sheep are identified primarily through flock identification. Sheep were not required to be individually identified, except in certain circumstances such as for export. Swine are identified both on a herd identification system and/or individual animal identification for breeding swine.

#### Outbreak summaries:

A total of 4 confirmed outbreaks of FMD occurred in Northern Ireland. The following tables detail the number of animals slaughtered in relation to each outbreak and the methods of destruction.

##### Outbreak/2001/NI/01 - Meigh

Premises/zone	Bovine	Ovine	porcine	other	Destruction
Infected premise (IP)	0	22	0	0	Burned
1 Km + contacts	532	1076	992	3	Burned
3 Km + corridor **	0	6752 ewes 3250 lambs	0	0	Rendered

Outbreak 2001/NI/01 was identified by clinical inspection on February 27, 2001. The animals on the infected premise were slaughtered on February 28. Animals within the 1 km radius were culled by March 6. The source of infection on this premise was traced to imports from Great Britain. On March 28, a decision was made in concert with the authorities in the Republic of Ireland to cull all sheep on the Cooley Peninsula – this involved all sheep from the protection zone around the Meigh outbreak to the Proleek outbreak in the Republic of Ireland. This was an extension of the 3 km zone, as specified in the above table.

##### Outbreak 2001/NI/02 – Coagh 1 (Ardboe)

Premises/zone	Bovine	Ovine	porcine	other	Destruction
Infected premise (IP)	633	178	0	0	Burned
1 Km	952	381	0	0	Rendered
3 Km	40	0	2630	0	Rendered

Outbreak 2001/NI/02 was initially identified by clinical inspection on April 10. The animals on the infected premise were slaughtered on April 13-15. Culling within the 1 km radius started on April 16. Within the 3 km zone, all pig herds were slaughtered, as was one cattle herd due to clinical suspicion. The cattle herd was later confirmed as negative. The source of infection on this premise has not been confirmed.

#### Outbreak 2001/NI/04 – Coagh 2 (Ardboe)

Premises/zone	Bovine	Ovine	porcine	Other	Destruction
Infected premise (IP)	274	226	0	0	Burned
1 Km	39	0	0	0	Rendered

Outbreak 2001/NI/04 was identified on April 20 and was linked with outbreak 2001/NI/02. This premise was within the 1 km zone established for outbreak 2001/NI/02 and was already scheduled for slaughter. The animals on the infected premise were slaughtered on April 20.

#### Outbreak 2001/NI/03 – Cushendall

Premises/zone	Bovine	Ovine	porcine	Other	Destruction
IP and suspect contiguous premise	147	1112 + 1000 lambs	0	0	Burned
1 Km	1714	16,000 (inc lambs)	0	0	Rendered
3 Km	0	11914	0	76	rendered

Outbreak 2001/NI/03 was identified on April 14. The animals on the infected premise were slaughtered on April 15. Culling of susceptible animals in the 1 km zone and sheep within the 3 km zone was started on April 16. The source of infection has not been confirmed, but is possibly linked to sheep moved from Great Britain in February.

#### Animals slaughtered on other suspect premises – 2 and contacts, negative on testing

Premises/zone	Bovine	Ovine	porcine	Other	Destruction
suspect	124	470 + 28 lambs	0	0	Burned

#### Control measures:

Restrictions were imposed on all suspect premises. These were served with Form A restrictions, preventing the movement of animals, animal products, people, vehicles, utensils, fodder and waste material.

A premise was declared infected once the diagnosis of FMD is made. All susceptible livestock on an infected premise (IP) were slaughtered. Disposal on the IP was by burning on site. A protection zone (3 km) and surveillance zone (10 km) were defined around each IP. All susceptible species within a 1 km radius of an infected premise were culled and additional culling within the 3 km zone was done as necessary. The additional culling was done based on an epidemiological assessment of possible spread or identified suspects or contacts.

After slaughter of animals on an IP, the premise was cleaned and disinfected. All machinery was cleaned and disinfected. Straw was burnt or buried on site, and any meal was buried. Manure was buried or stacked in piles sufficient to compost. Bagged silage

was disinfected with a 4% soda solution, and silage clamps had 30 cm removed from the surface and buried.

Chronology:

21 February – outbreak confirmed and notified in Great Britain

- traceback of all animals imported from GB since 23 January
- Community legislation (Decision 2001/145/EC) prohibiting trade in live animals, fresh meat and untreated products from the UK

27 February – Outbreak 1 identified in Northern Ireland, Meigh – protection and surveillance zones established

28 February – ban on animal movements (except to slaughter) and the holding of livestock auctions and markets

6 March – movement licensing system introduced (movement to slaughter only)

15 March – licensing extended to cover movement between premises for animal welfare reasons

29 March – Proleek (Cooley peninsula) cull – within and between Meigh protection zone and Proleek protection zone – 9945 sheep from 81 holdings culled

30 March – further adjustments to licensing, including the introduction of general licenses and extended welfare movements

10 April – Outbreak 2, Ardboe 1 (Coagh) – initial clinical lesions identified, protection and surveillance zones established

14 April – Outbreak 3, Cushendall, identified – protection and surveillance zones established

14/15 April – licensing suspended and licenses rescinded

20 April – Outbreak 4, Ardboe (Coagh) identified – protection and surveillance zones established (extension of zones already established from Outbreak 2)

23 April – licensed movements to slaughter resumed

25 April – other licensing resumed

7 June - restrictions lifted in Community legislation

### Animal movement licenses:

Licenses for the movement of animals were introduced as a method of controlling animal transports as necessary. The conditions for movement licenses were as follows:

- license required for movement by road or across another holding
- license must accompany animals during the journey
- animals must move directly from origin to destination
- vehicles must be cleaned and disinfected before and after each journey
- in the case of cattle and pigs, normal movement notification requirements also apply

### Serological survey of sheep flocks:

A decision was made to complete an extensive serological survey for evidence of FMD infection in sheep flocks in Northern Ireland. This was done to determine if any infected sheep flocks remained in NI. Sampling was done of all traced flocks and flocks in 10km surveillance zones. This was done after 21 days within the zones. Additional sampling of all areas of NI was also done.

Sampling was done in the following types of flocks:

- all risk flocks: tracing, contacts, suspect illegal imports, recent imports, 3 and 10 km zones, periphery of zones, etc...
- flocks in the Glens of Antrim and the Sperrins – random samples to detect a minimum of 1% prevalence with 95% confidence
- flocks in the Mourne – random samples as described

The estimates of numbers of sheep flocks, based on a June 200 census, were as follows: 1776 flocks in the Glens of Antrim, 3237 flocks in the Sperrins, 2409 flocks in the Mourne, and 3305 flocks in other areas. The concentrations of flocks are in the areas with common grazing, and these are the primary areas selected for further surveillance.

The estimated numbers of samples to be obtained were approximately 90,000 samples from risk flocks, and 71,000 samples from random selections. This would then be extended to other flocks in the rest of the country as described, leading to a final estimate of approximately 500,000 samples total.

At the time of the visit, a total of 436,510 samples total had been collected from 9195 flocks. This represents approximately 80% of all flocks. Initial testing was done at VSD, with positive samples forwarded to Pirbright for supplemental testing. A total of 8499 (92.4%) of the flocks were negative on initial blocking ELISA test, with 696 flocks positive on this test. A total of 1014 samples of these ELISA positive results were forwarded to Pirbright for virus neutralization testing. Of these, 985 were negative on the virus neutralization test, leaving 29 with a “non-negative” result. All flocks with non-negative results were subject to further epidemiological investigations, with no additional

evidence of disease. The conclusion of the survey to date was that no further FMD has been detected in any flocks in Northern Ireland.

A question was asked about the limitations of this survey with samples only obtained from sheep. Sheep were targeted because of the possibilities of inapparent infection and the fact that the disease could have been missed in this species. Sheep and their movements have played a central role in the outbreak in Great Britain, with possibilities of unrecorded and illegal movements of sheep into and within Northern Ireland. Cattle were not sampled in the survey because of the assumption that cattle would have demonstrated clinical signs. With the additional clinical surveillance, especially in the protection and surveillance zones, it is assumed that any clinical signs in cattle would have been seen and reported.

#### Import controls:

Controls are maintained on ports of entry from Great Britain. Travel and cargo from Great Britain arrives either by air or by ferry. The movement of animals and untreated products from Great Britain is prohibited. This is monitored both in cargo and in passenger travel. The team visited a passenger ferry terminal and observed DARDNI officials checking vehicles during offloading of the ferry. Passenger vehicles were stopped and questioned, and cargo trucks were questioned and tailgate inspections done as necessary.

#### General comments

The information provided the team with a good understanding of the actions taken in response to the outbreak. It appeared that these constituted an effective, efficient, and timely response to incursion of a foreign animal disease.